What is claimed is:

1. An optical imaging system to variably control image properties of an image, comprising:

at least one optical phase filter; and

a controller for positioning the optical phase filter to alter phase of a wavefront of the imaging system to select the properties of the image.

2. The optical imaging system of claim 1, the image properties comprising one or more of depth of focus, aberration tolerance and aliasing properties.

3. The optical imaging system of claim 1, the at least one optical phase filter comprising first and second optical filters.

4. The system of claim 1, the optical phase filter comprising a circularly symmetric phase form of $P(r,\theta) = A(r,\theta) + B(r)$.

5. The optical imaging system of claim 4, the optical phase filter comprising aspheres.

6. The optical imaging system of claim 1, the controller comprising a motor.

7. The optical imaging system of claim 1, the controller translating the optical phase filter between at least two positions wherein the wavefront passes through at least two separate portions of the optical phase filter.

8. The optical imaging system of claim 1, the controller rotating the optical phase filter about an optical axis to effect phase changes to the wavefront.

9. The optical imaging system of claim 1, the optical phase filter having a phase function of the form $P(x,y)+D(x_1, y_1)$.

10. The optical imaging system of claim 1, the optical phase filter being disposed proximal to one of an aperture stop of the optical system and an image of the aperture stop.

11 The optical imaging system of claim 1, further comprising (a) a detector for capturing an image of the object and (b) a post processor for processing data from the detector to reverse effects induced by the optical phase filter.

12. The optical imaging system of claim 11, wherein the post processor comprises a digital filter.

13. The optical imaging system of claim 1, further comprising a user interface for selecting an amount of the image properties and a controller, responsive to user selections at the interface, to direct the controller to position the optical phase filter and effect the amount of image properties.

14. The optical imaging system of claim 1, wherein the controller comprises an automatic motor and controller.

15. The optical imaging system of claim 1, wherein the optical phase filter is disposed proximal to one of an aperture stop of the optical system and an image of the aperture stop.

16. The optical imaging system of claim 1, wherein the optical phase filter comprises a phase mask.

17. The optical imaging system of claim 18, wherein the phase mask implements a phase function of the form:

$$P(r,\theta)_c = [2\cos(3\phi)]\ \alpha\, r^3 \cos(3\theta).$$

18. The optical imaging system of claim 18, wherein the phase mask implements a cubic phase function when moved by the means for moving.

19. The optical imaging system of claim 18, wherein the cubic phase function is of the form:

$$P(x,y) = \alpha\, x^3 + \beta y^3 + \delta x^2 Y + \gamma\, x y^2$$

where $P(x,y)$ represents phase as a function of the spatial coordinates (x,y).

20. The optical imaging system of claim 1, the characteristics of the image comprising one or more of depth of focus, depth of field, aliasing properties, and aberration tolerance.

21. The optical imaging system of claim 1, further comprising means for adjusting one or both of aperture and focal length of the system, the controller repositioning the optical phase filter so that the imaging properties remain substantially fixed irrespective of the means for adjusting.

22. A method for variably affecting the wavefront of an optical system to selectively control imaging properties, the method comprising the steps of:

positioning one or more optical phase filters in the optical system; and

repositioning the optical phase filters to effect the imaging properties.

23. The method of claim 22, further comprising the step of capturing images from the system and post-processing a digital representation of the images to reverse effects induced by the optical phase filters.

24. The method of claim 23, further comprising the steps of automatically responding to user selection of the imaging properties to reposition the optical phase filters to effect phase changes of the wavefront to achieve the selected imaging properties.

25. The method of claim 22, further comprising adjusting one or both of focus and aperture of the imaging system, the step of repositioning comprising repositioning the optical phase filters to counter imaging effects associated with the step of adjusting one or both of focus and aperture.

26. A method for variably affecting the wavefront of an optical system to select image properties of the optical system, the method comprising the steps of:

moving a phase filter within the optical system to modify phase of the wavefront; and

forming a final image by post processing data from a detector of the optical system to reverse effects induced by the phase filter and achieve the selected image properties.

27. The method of claim 26, further comprising the step of modifying one or both of a focal length and aperture of the optical system, the step of moving comprising the step of moving the phase filter to compensate for modification of the focal length and aperture such that image properties remain substantially unchanged.

28. The method of claim 27, the image properties comprising one or more of depth of field, aberration tolerance and aliasing properties.

29. A method for variably affecting the wavefront of an optical system to select image properties of the optical system, the method comprising the steps of:

moving at least two phase filters within the optical system to modify phase of the wavefront; and

forming a final image by post processing data from a detector of the optical system to reverse effects induced by the phase filters and achieve the selected image properties.